

AMENDMENTS TO THE CLAIMS

This listing replaces all prior versions and listings of claims in the application.

Listing of Claims

1. (Currently Amended) A method of converting venous blood values to arterial blood values, said method comprising the steps of:
 - a) providing values of arterial oxygenation,
 - b) measuring and estimating values of acid/base status and oxygenation status in a blood sample, the sample being obtained from **peripheral** venous blood,
 - c) converting the venous blood values by applying a mathematical model for deriving blood acid/base status and oxygenation status into estimated arterial blood values.
2. (Currently Amended) A method **values** according claim 1, said method measuring and **analysing analyzing** comprising the further steps of:
 - d) providing an anaerobic venous blood sample **obtained from peripheral venous blood**,
 - e) **analyzing analyzing** said anaerobic venous blood sample for evaluating the acid/base status of the venous blood sample, and
 - f) **analyzing analyzing** said anaerobic venous blood sample for evaluating the oxygenation status of the venous blood sample.
3. (Previously Presented) A method according to claim 1, said method comprising the further step of:
 - g) providing the arterial oxygenation such as oxygen saturation, pressure or concentration, said further step being performed at any time in relation to any of the steps a) - c).
4. (Previously Presented) A method according to claim 3, said method comprising the even further step of :
 - h) simulating the blood acid/base status and oxygenation status of an arterial blood sample by use of mathematical modelling.

5. (Previously Presented) A method according to claim 4, said method comprising still even further steps of

- i) mathematical modelling comprising simulated addition of oxygen, O_2 , to and removal of carbon dioxide, CO_2 , from the venous blood sample values in a ratio determined by the respiratory quotient,
- j) said mathematical modelling being performed until the simulated oxygen level is equal to the arterial oxygenation level measured or estimated, and
- k1) calculating the acid/base status and the oxygenation of the arterial blood by applying the result of said modelling.

6. (Previously Presented) A method according to claim 5, said method comprising still even further steps of

- i) mathematical modelling comprising simulated addition of oxygen, O_2 , to and removal of carbon dioxide, CO_2 , from the venous blood sample values in a ratio determined by the respiratory quotient,
- j) said mathematical modelling being performed until the simulated oxygen level is equal to the arterial oxygenation level measured or estimated, and
- k2) estimating the acid/base status and the oxygenation of the arterial blood by applying the result of said modelling.

7. (Currently Amended) A method according to claim 1, said method comprising a further step of

- l) providing the arterial carbon dioxide level such as carbon dioxide pressure, total concentration or bicarbonate concentration, said further step being performed at any time in relation to any of the steps a) - c).

8. (Previously Presented) A method according to claim 7, said method comprising an even further step of

- m) simulating the blood acid/base status and oxygenation status of arterial blood sample by use of modelling.

9. (Previously Presented) A method according to claim 8, said method comprising the still even further steps of

- n) mathematical modelling comprising simulated addition of O₂ to and removing CO₂ from the venous blood sample values in a ratio determined by the respiratory quotient,
- o) said modelling being performed until the simulated carbon dioxide level is equal to the arterial carbon dioxide level measured or estimated, and
- p1) calculating the acid/base status and the oxygenation of the arterial blood by applying the result of said modelling.

10. (Previously Presented) A method according to claim 8, said method comprising the still even further steps of

- n) mathematical modelling comprising simulated addition of O₂ to and removing CO₂ from the venous blood sample values in a ratio determined by the respiratory quotient,
- o) said modelling being performed until the simulated carbon dioxide level is equal to the arterial carbon dioxide level measured or estimated, and
- p2) estimating the acid/base status and the oxygenation of the arterial blood by applying the result of said modelling.

11. (Previously Presented) A method according to claim 10 where the measuring or estimating of the arterial oxygen saturation is done by pulse oximetry.

12. – 26. (Cancelled)